ACTION TEAM PROGRESS REPORT

Pesticide Spray Drift Reduction Technologies: Verification and Incentives for Use

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Environmental Problem: The application of pesticide sprays usually results in the formation and downwind movement of very small spray droplets of the pesticide which can drift with air currents from the intended target sites (e.g., crop fields) and deposit on nearby sensitive sites, such as suburban developments, endangered species habitats, and water bodies, resulting in risks of adverse effects to humans and/or the environment. The magnitude and complexity of the problem is significant; EPA (OPP) estimates 500 million pounds of pesticides are applied annually to US agricultural land to benefit crop production but 3%, or approximately 15 million pounds of that total, may drift to and deposit on unintended sites. Although EPA (OPP) imposes application restrictions on pesticide product labels for applicators to follow in order to reduce spray drift and the associated potential risks, use of specific types of application equipment or technologies can offer pesticide applicators greater flexibility in reducing and mitigating pesticide spray drift. This environmental problem exists not only in the US but in other countries as well.

Technology Challenges: A number of technologies offer the potential to reduce the amount of spray drift from pesticide applications. The technology challenge is to verify the performance of DRTs that significantly reduce pesticide spray drift and to increase the use of such technologies by agricultural pesticide applicators. Use of verified DRTs has the potential to significantly reduce spray drift (projected average reduction of 50%), the associated potential risks, and incidents and enforcement actions by state pesticide enforcement agencies.

Although pesticide applicators are required to mitigate spray drift by following application directions and restrictions on pesticide labels, some applicators also voluntarily use application technologies that are marketed by manufacturers as DRTs. EPA believes many potentially effective DRTs are not generally used but may be economical. In the US, the acceptance and use of DRTs is limited by a dearth of credible information about their effectiveness and the lack of a regulatory mechanism for rewarding those applicators that use effective DRTs.

To address this challenge, the effectiveness of DRTs will be verified by a voluntary program of testing that uses EPA's Environmental Technology Verification (ETV)

program as a model for evaluation. The EPA workgroup members have drafted a test protocol to perform these evaluations of DRTs and have shared it with a stakeholder technical panel (STP). EPA has met twice with the STP, an international mix of representatives from pesticide equipment and chemical manufacturers, academia, and regulators. Resources to support protocol development and support initial testing have been secured through the ETV program's Environmental and Sustainable Technology Evaluation (ESTE) program.

Simultaneously, OPP is working to develop a process to credit the use of verified DRTs in its registration, or licensing, program of pesticides. Use of DRTs for applying specific pesticides can be voluntarily proposed by the products' manufacturers and/or required by OPP to mitigate spray drift of higher risk pesticides especially if commonly used drift mitigation measures are insufficient for needed risk reduction.

There are a number of benefits from pesticide products labeled for use with DRTs. For the US agriculture sector, pesticide applicators and growers will know that the DRTs they use to reduce drift and risks have verified effectiveness; pesticides may be applied with less stringent restrictions providing greater flexibility to applicators and growers in getting their pest control job done on time and at less cost; potentially fewer enforcement cases and insurance claims from fewer incidents of adverse effects; and, increased demand for DRTs will stimulate equipment manufacturers to design and market new DRTs.

Benefits for EPA and state agencies, the public, and the environment include potentially significant reductions of pesticides impacting non-target sites including humans and property, sensitive environmental sites and wildlife including habitat for threatened and endangered species; reduce resource costs for state agencies for carrying out their pesticide enforcement responsibilities; and a non-regulatory, voluntary partnership between government and industry sectors to achieve important risk reduction. OPP also believes applicators who purchase DRTs will routinely use them even when not required by product labeling, further reducing the amount of spray drift. Additionally, the goal and thrust of this project is compatible with efforts by other countries.

Early Accomplishments:

- Scoping meetings of DRT idea – 2003, 2004
- Awarding of ETV ESTE grant – 2005

FY'06 Accomplishments:

- Report on DRTs and published test methods – December 2005
- First DRT meeting with technical panel – January 2006
- Draft of test protocol for panel/public review – June 2006
- Second DRT meeting with technical panel – review of draft protocol – July 2006

FY'07 Objectives:

- Complete test protocol and make available – November 2006
- Select reference (baseline) technologies – November 2006

- Select qualified testing facilities – January 2007
- Conduct beta test of new protocol – March 2007
- Start review of completed initial studies – June 2007
- Begin using verified DRTs in risk assessments and on product labels – September 2007
- Use labeling and other existing programs to communicate and encourage use of DRTs – FY'08

Issues:

- After the pilot test of the protocol is completed through conducting verifications of several DRTs, what mechanism(s) will be put into place to enable continued testing of additional/future technologies?